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Shahryari on Bloor and the Strong Program

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In “A Tension in the Strong Program: The Relation between the Rational and the Social”, Shahram Shahryari (2022) advances the following thesis: In his Strong Program in the sociology of science, David Bloor blames traditional philosophy of science for adopting a dualist strategy in explaining scientific developments, as it employs rational explanation for successful science and social explanation for flawed science. Instead, according to Bloor, all scientific developments should be explained monistically, i.e. in terms of social causes. This is also referred to as the Symmetry Principle, and it is a key tenet in the Strong Program. The author detects a tension here, as Bloor apparently asserts that traditional philosophy of science deploys two kinds of explanation, and simultaneously insists that there is only one kind, i.e. social explanation.

### **Shahryari’s Critique of Bloor**

The author walks us through a number of alternative construals of Bloor’s position that might alleviate the tension, but they all end up concluding that there is indeed a robust contradiction in the program. Finally, the author examines various recent efforts by Bloor defenders to dissolve the tension through deployment of sophisticated philosophical tools that go way beyond the original compass of Bloor’s argument.

Now there might indeed be insights to be gained from such attempts to rethink and update Bloor’s position. Still they miss the thrust of Bloor’s original position; indeed, I believe that Dr. Shahryari’s critique in particular results from a misreading of Bloor’s argument. Bloor’s charge against traditional philosophers of science is that they *falsely believe* that there are two kinds of explanations of scientific beliefs, rational and social (or two kinds of *causes* of scientific beliefs, rational and social; this difference in formulation is not significant with respect to my critical points below). Philosophers of science also *falsely believe* that they have often been able to provide rational explanations of significant episodes in the history of science, while presenting social explanations of such abnormalities as Lysenian biology.

Both beliefs are mistaken, according to Bloor, as there is only one kind of explanation, i.e. the social kind (Bloor restricts this to the theoretical parts of science, leaving room for other kinds of causal influence, such as psychological ones, on the observational side of science. I shall take this restriction as understood in the following). Bloor presents this as an empirical finding, an inductive generalization of a long series of recent case-studies of scientific developments (1976/1991 ix; 1981, 206). Among them is the reception of phrenology in early 19th century Edinburgh as investigated by Steven Shapin (1975), and the emergence of quantum mechanics in the interwar years as analyzed by Paul Forman (1971).

In all these cases, according to Bloor, the scientific developments were successfully explained in terms of such standard social causes as class interests, “Zeitgeist” and others. Bloor urges the sociologists of science to take heart from such successes and finally throw off their subservience to the philosophical dogma that they can only handle flawed science: The sociology of science should extend its explanatory efforts to every type of scientific activity, whether successful or flawed, rational or irrational (Bloor 1976/1991, 4). The same kind of explanation would apply to all, i.e. one deploying the standard methods and conceptual

resources of sociology. This is indeed the import of principles 2 and 3 of Bloor's statement of the defining principles of the Strong Program (7). There is no tension or contradiction in this position.

### Rational and Social Explanations

Yet the matter does not quite end here. It might be argued that Bloor is still implicitly committed to the existence of two kinds of explanation, despite his claims to the contrary; more specifically, he is committed to the existence of *rational* explanations. For the notions of "rational explanation" and "social explanation" are interdefined, since the notion of "social explanation", at least in any version relevant to the present topic, is defined by its opposition to rational explanation.

We must distinguish between two different senses of "existence" here, however. In the first sense, we are talking about the existence of a *concept* or *notion*, *in casu* the notion of "rational explanation". In the second sense, we are talking about the existence of actual *instances* of such explanation. We may agree that Bloor is committed to the existence of rational explanations in the first sense, i.e. the existence of the mere notion. Bloor, however, could happily accept this point, and easily rephrase his position to accommodate it. He would simply state that the notion of rational explanations has no instances, as all actual explanations refer to such societal forces as class interests, *Zeitgeist* or whatever. For this to work, Bloor would of course have to recognize some notion or other deserving the name of "rational explanation", but he would be under no obligation to specify its contents, happily leaving this task to the proponents of this notion. After all, biologists who assert that mermaids do not exist are not committed to providing a detailed description of such beings and an account of their habits. They simply deny the existence of specimens of whatever believers in mermaids take them to be. Similarly, Bloor could happily leave it to believers in rational explanation to specify its nature.

This strategy is only viable, however, to the extent that Bloor's position rests on his positive, inductive argument, which draws a general conclusion from a number of cases where scientific theories have supposedly been shown to be shaped by societal factors. Bloor, however, goes on to supplement this with a negative argument of a philosophical nature, which attempts to demonstrate the incoherency of the "rational" type of explanation, thus guaranteeing that no such explanation will ever be encountered. With this move, Bloor is committed to providing at least a working definition of "rational explanation". What is much more significant for our current topic, however, is that this strategy will not deliver what Bloor needs for his overall project. He set out to effect a naturalization and sociologization of the study of science, where the content of scientific theories would be explained in the standard categories of sociology. Instead, we are offered a philosophical argument supposed to show that a certain traditional but rather vaguely defined notion of "rational explanation" has no application.

This shift in Bloor's argument occurs between the first and the second edition of *Knowledge and Social Imagery* (1976/1991). In the second edition, Bloor invokes Wittgenstein's celebrated rule-following argument from the *Philosophical Investigations* to support his position (*op. cit.*, 164), and the point is elaborated in Barnes, Bloor, and Henry (1996) under the name of "finitism". In this argument, Wittgenstein tries to show that the mysterious compulsion that

logic and mathematics seem to exert on us is really just the social pressure of shared human practices.

Unfortunately, when Bloor deploys this argument in service of his own agenda, the notion of “social explanation” or “social causes” undergoes a change of meaning. Obviously, the terms of Bloor’s original social explanations, such as “class interest” or “Zeitgeist”, cannot be derived from Wittgenstein’s argument. *A fortiori*, Wittgenstein’s argument cannot show that such factors are at work in shaping the activities of human agents. Hence, if Bloor is to derive validly the social determination thesis from Wittgenstein’s argument, “social determination” must now be understood in a different sense. It now simply means “determination by other factors than the mysterious “rational” compulsion of rules and precedents”. Specifically, the term does not refer to the narrow set of standard social forces that Bloor wants to invoke.

### **On Social Determination**

Let me now demonstrate this point in more detail. First, we must observe that two different meanings of the term “social determination” are in play in Wittgenstein’s rule-following argument, viz. a normative and a causal one. The difference is crucial for our present discussion, and it must be carefully heeded when we assess the relevance of Wittgenstein’s argument to Bloor’s project. *Normative social determination* means that only an actual communal consensus determines what counts as a *correct* move within any rule-governed practice, such as the use of linguistic terms, or operations within logic or mathematics. *Causal social determination* is the view that social factors causally determine the acts people actually perform within such rule-governed practices. Wittgenstein advances a thesis within both domains, but neither is equivalent to Bloor’s thesis, nor do they imply it even in combination. As a matter of fact, they rather undermine it.

Wittgenstein’s celebrated rule-following argument aims primarily to establish *normative social determination*, i.e. that the *correct* use of any term and the *correct* application of any rule is fixed solely by communal consensus. There is no transcendental notion of “correctness” dictating that some particular application of the term “red”, “adding 2” or, for that matter, any particular way of “dancing the quickstep”, is the *correct* one. Nor is there any transcendental notion of “sameness” that singles out any particular way of extending those practices as *going on in the same way* as before. Only communal consensus decides the matter. Without the possibility of such consensus, there is no correct way go on within a practice, which is the same as to say that that practice collapses. If the practice concerns the use of a linguistic term, failure to reach a consensus on its proper use means that it becomes void of meaning. This condemns as meaningless all terms whose application is not open to communal monitoring, such as “pain”—as Wittgenstein notoriously concluded in his celebrated “private language argument”.

Wittgenstein’s argument thus concerns the notion of *correctness* for rule-governed human actions. The argument has no implications for the question of what *causes* the concrete moves people make within a given human practice—where *incorrect* moves would of course also occur. In particular, there is no implication that the moves are determined or influenced

by such standard sociological factors as class interest or *Weltanschauung*.

### **Wittgenstein and Bloor**

Now Wittgenstein does indeed have something to say about the causal determination of human practices, but, unfortunately for Bloor, this happens rather to contradict his thesis. Wittgenstein argues that *learning to participate* in a human practice does not depend on explicit instruction and definition, but rather just *drill*; that is, a practical pedagogical exercise involving, in the case of learning a linguistic term, the pupil's being rewarded for correct applications of the term and censured for wrong ones. The pupil in Wittgenstein's famous example who is asked to continue the number series of 2, 4, 6, 8 ... will receive a rap over his knuckles if somewhere down the line, he continues with 1000, 1004, 1008 ... (Wittgenstein 1953, § 185) This disciplining will go on till he "gets it right", i.e. falls in line with the rest of us.

Wittgenstein's argument challenges the powerful transcendentalist and intellectualist tradition in philosophy which stretches from Plato to Frege, Husserl and Popper, and to appreciate the import of the argument, we may contrast it with Plato's famous account of learning in the *Meno*. This Platonic dialogue indeed provides an illuminating counterpoint to "Wittgenstein's pupil". In the dialogue, Socrates helps a young slave boy with no schooling whatsoever to acquire a grasp of the geometry of squares. Socrates concludes that the concept of a square and its essential geometrical properties must be innate to man, allowing the boy to "remember" it when being suitably stimulated; the more precise and technical Platonic term would be "achieving an intellectual intuition of the eternal and immutable idea of the square". This is among the philosophical prejudices with which Wittgenstein takes issue in the *Investigations*, and in a radical manner. No passive staring at a Platonic idea with the mind's eye would help the slave boy to properly grasp the geometrical properties of squares. Instead, what does the work is actually plainly revealed in the dialogue, i.e. the gentle *drill* to which Socrates exposes the boy after having corrected his first, erroneous answer to a question about the area of squares, slowly nudging him towards the correct one through a series of patently leading questions.

Wittgenstein's anti-Platonic argument only serves to show the practical, social nature of language learning, however, and has no implications for language use as a going concern. Specifically, it says nothing about what might cause disagreements over concrete cases among the participants of an established linguistic practice. Wittgenstein's theory of language acquisition must obviously allow for the occasional occurrence of such disagreement, but is actually quite consistent with usage being perfectly uniform across the community and, in particular, highly resistant to social influences that might disrupt that uniformity. In brief, the argument offers no support for Bloor and the Strong Program.

### **Understanding Agreement**

The opposite is rather the case, as it is indeed questionable if Wittgenstein could countenance the level of disagreement over the application of scientific terms that Bloor needs for his argument. The famous paragraph 242 in the *Philosophical Investigations* is relevant here:

If language is to be a means of communication, there must be agreement not only in definitions but also (queer as this may sound) in judgements. This seems to abolish logic, but does not do so. — It is one thing to describe methods of measurement, and another to obtain and state results of measurement. But what we call “measuring” is partly determined by a certain constancy in results of measurement.

We might paraphrase this as follows: If agreement, or a close approximation thereto, cannot be attained in the use of a given term within a linguistic community, that term is useless as a tool of communication. Even worse, we cannot take this term to possess a determinate meaning, which further implies that no genuine feature of reality is captured by this term. This goes for the simple terms of everyday language as well as for scientific terms that require measurement and experiments for their proper application.

In the same context, Wittgenstein expresses doubt concerning the intelligibility of supposing that people might not generally agree on the use of simple terms of ordinary language; terms that would also form part of the observational vocabulary of science: “If there did not exist an agreement in what we call ‘red’, etc. etc., language would stop” (Wittgenstein 1953, 226; cf. Wittgenstein 1967, 96; also Wittgenstein 1969, §§ 624-626). Agreement has a quasi-transcendental status in Wittgenstein’s system, as agreement about the use of linguistic terms is required for them to express and communicate truths.

The Strong Program considers scientific controversy and dispute to offer privileged opportunities for insight into the workings of science. This approach runs counter, however, to Wittgenstein’s understanding of the foundations of the “language games” of science and mathematics:

Disputes do not break out (among mathematicians, say) over the question whether a rule has been obeyed or not. People do not come to blows over it, for example. That is part of the framework on which the working of our language is based (for example, in giving descriptions). (Wittgenstein 1953, § 240).

Of course, in one sense mathematics is a branch of knowledge, but still it is also an *activity*. And ‘false moves’ can only exist as the exception. For if what we now call by that name became the rule, the game in which they were false moves would have been abrogated (227).

Thus, there are serious obstacles to Bloor’s attempt to base a social reconstrual of science upon Wittgenstein’s rule-following argument. He would have to show that the socio-*normative* determination of rule-governed human practice supposedly established by this argument —e.g., the determination of the *correct* way to “go on” within a practice —implies a socio-*causal* determination of concrete acts within that practice, and in a very demanding sense of “social” at that. What we find instead in Bloor and other representatives of the Strong Program is rather a conflation of the two things. (There is a clear example of the slide from one to the other in Bloor 1976/1991, 164-65.) The causal determination thesis in no

way follows from Wittgenstein's rule-following considerations; as a matter of fact, I have tried to show that Wittgenstein would probably not have endorsed the play that Bloor makes with the alleged variation in language use.

### **Bloor's Agenda**

To conclude: Bloor's original thesis, as summarized in the four principles of his Strong Program, made a substantive, empirical claim within the sociology of science. His reformulated thesis, invoking Wittgenstein's rule-following argument, simply changes the subject. This should come as no surprise, as Wittgenstein's later philosophy was not meant as a contribution to sociology. Instead, Wittgenstein was "collecting reminders" for a philosophical purpose, i.e. devising a therapy that would enable philosophers to rid themselves of those strong intellectual prejudices that produce what is known as "philosophical problems".

Why would Bloor give this fateful philosophical twist to his argument, if he believed at the outset that his Strong Program rested securely on inductive reasoning, of a kind conforming to his naturalist principles? We may surmise the following: When Bloor started out to reform the sociology of science, a number of authors had already raised powerful philosophical criticisms of the standard rationalist conception of science. Among these, Kuhn was the most important figure by far, and the significance of *The Structure of Scientific Revolutions* (Kuhn 1962/1970) was hailed by Bloor and many other representatives of the new Science Studies. There would hence be a strong temptation for Bloor to align himself with Kuhn's work to strengthen his case for a non-rationalist, naturalistic reinterpretation of science; and as Kuhn's conclusions relied in part on Wittgenstein's philosophy of language, Bloor would thereby recruit Wittgenstein as an ally, too. But this strategy would never work: Bloor's agenda was not the same as Kuhn's (or Wittgenstein's), and Kuhn would indeed soon turn against Bloor and the Strong Program.<sup>1</sup>

As is clear from Shahram Shahryari's article, the debate over the relationship between the Rational and the Social in the progress of science may well be continued along philosophical lines that take it far away from the initial simple naturalism of the Strong Program. It would be ironic, however, if Bloor's project of naturalizing the study of science, breaking what he saw as the philosophers' stranglehold on the topic with their dogmatic *a priori* ideas about science, would eventually itself devolve into an ordinary philosophical discussion.<sup>2</sup>

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<sup>1</sup> In the article, "The Trouble with the Historical Philosophy of Science", Kuhn states: "I am among those who have found the claims of the strong program absurd: an example of deconstruction gone mad." (Here cited from Kuhn 2000, 10.)

<sup>2</sup> I present a more thorough analysis of the tension between the naturalistic and philosophical aspects of Bloor's work in my monograph *Science Studies as Naturalized Philosophy*, Springer, Dordrecht 2011.

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